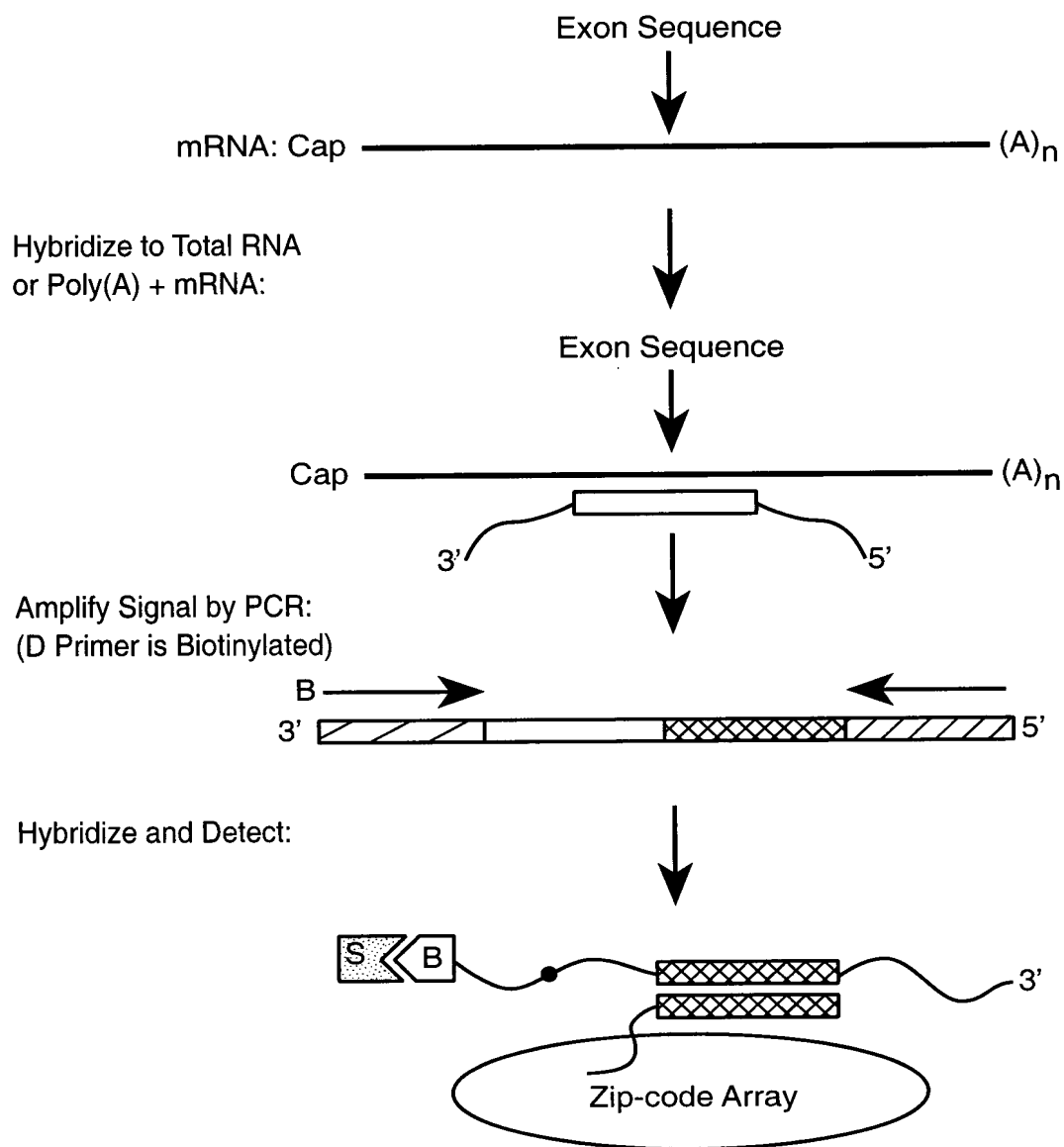


# A Flow Chart for Array-based Detection of Gene Expression


Hybridization Oligo: 3'  5'

U: Upstream universal priming site  
Zip: Unique sequence as a molecular "zip-code"  
EX: Gene-specific exon sequence  
D: Downstream universal priming site

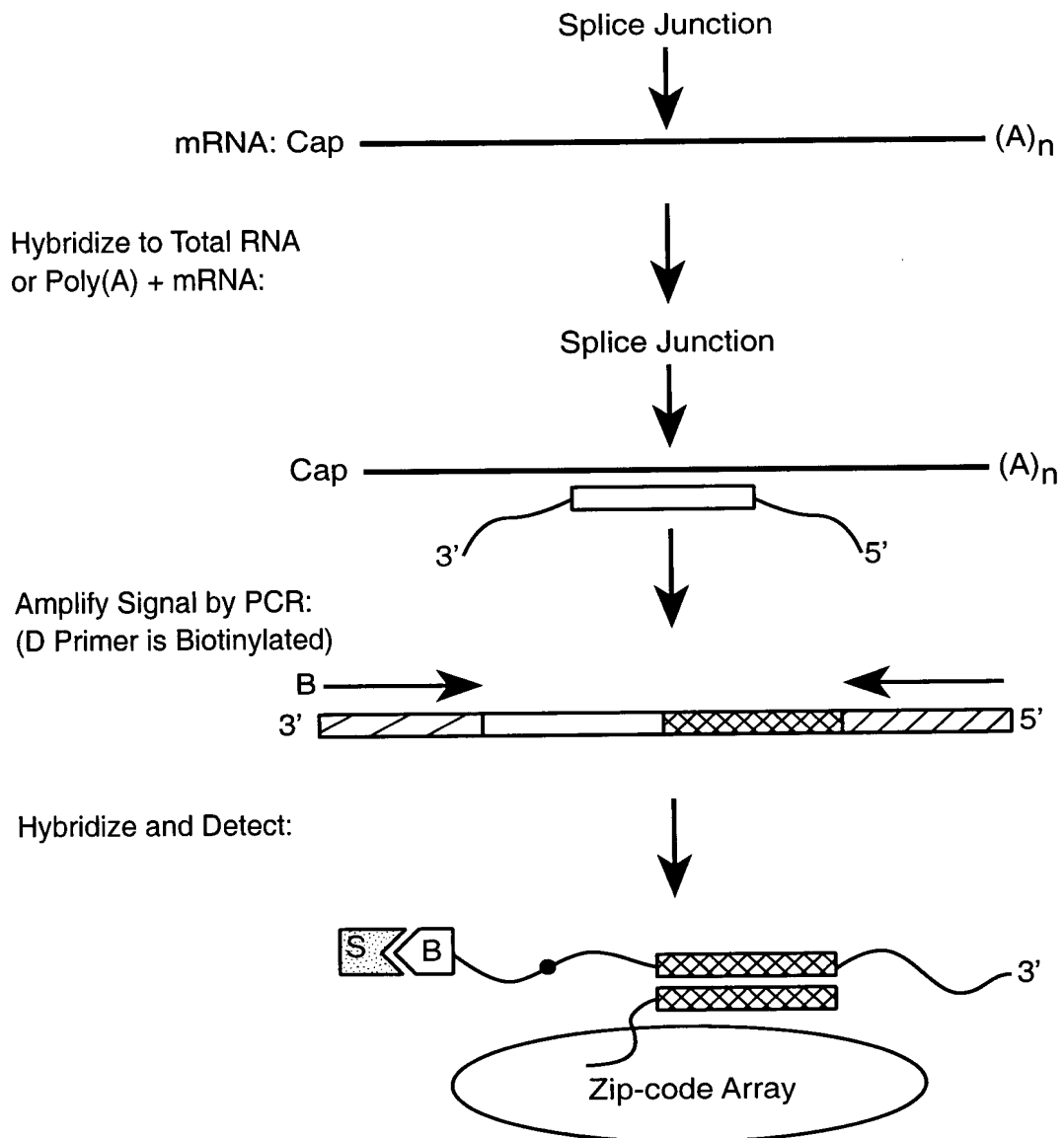


**FIG. 1**

# A Flow Chart for Array-based Detection of RNA Alternative Splicing

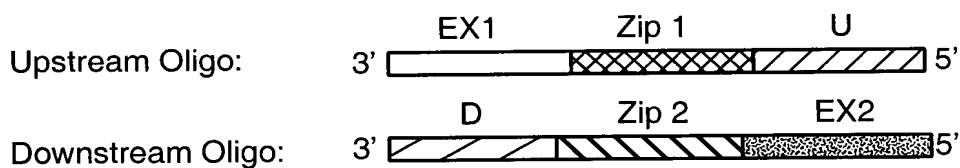
Hybridization Oligo: 3'  5'

U: Upstream universal priming site  
Zip: Unique sequence as a molecular "zip-code"  
SJ: Gene-specific splice junction  
D: Downstream universal priming site

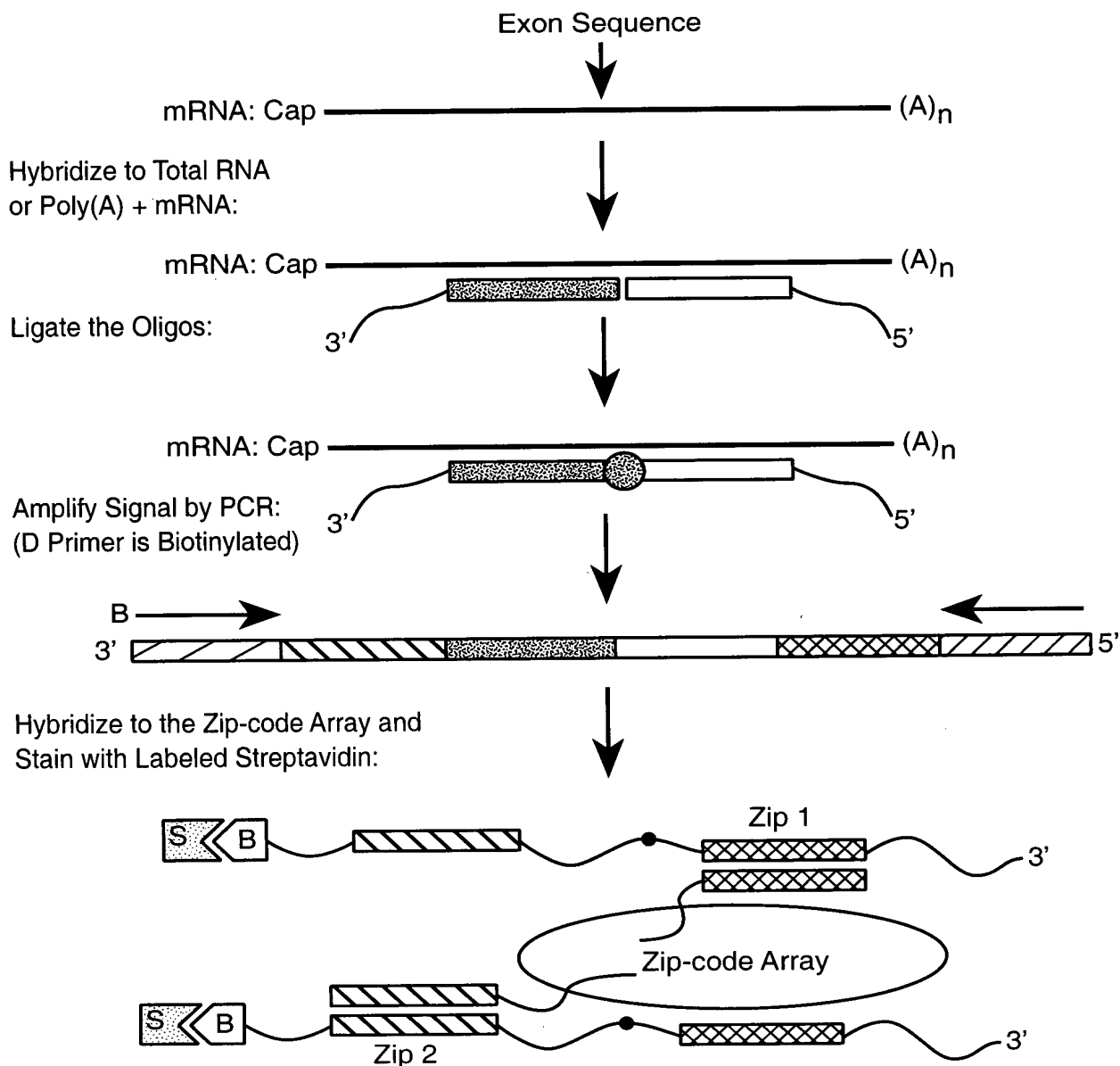


**FIG.\_2**

## Genome-wide Gene Expression Profiling Using Oligo-ligation Strategy

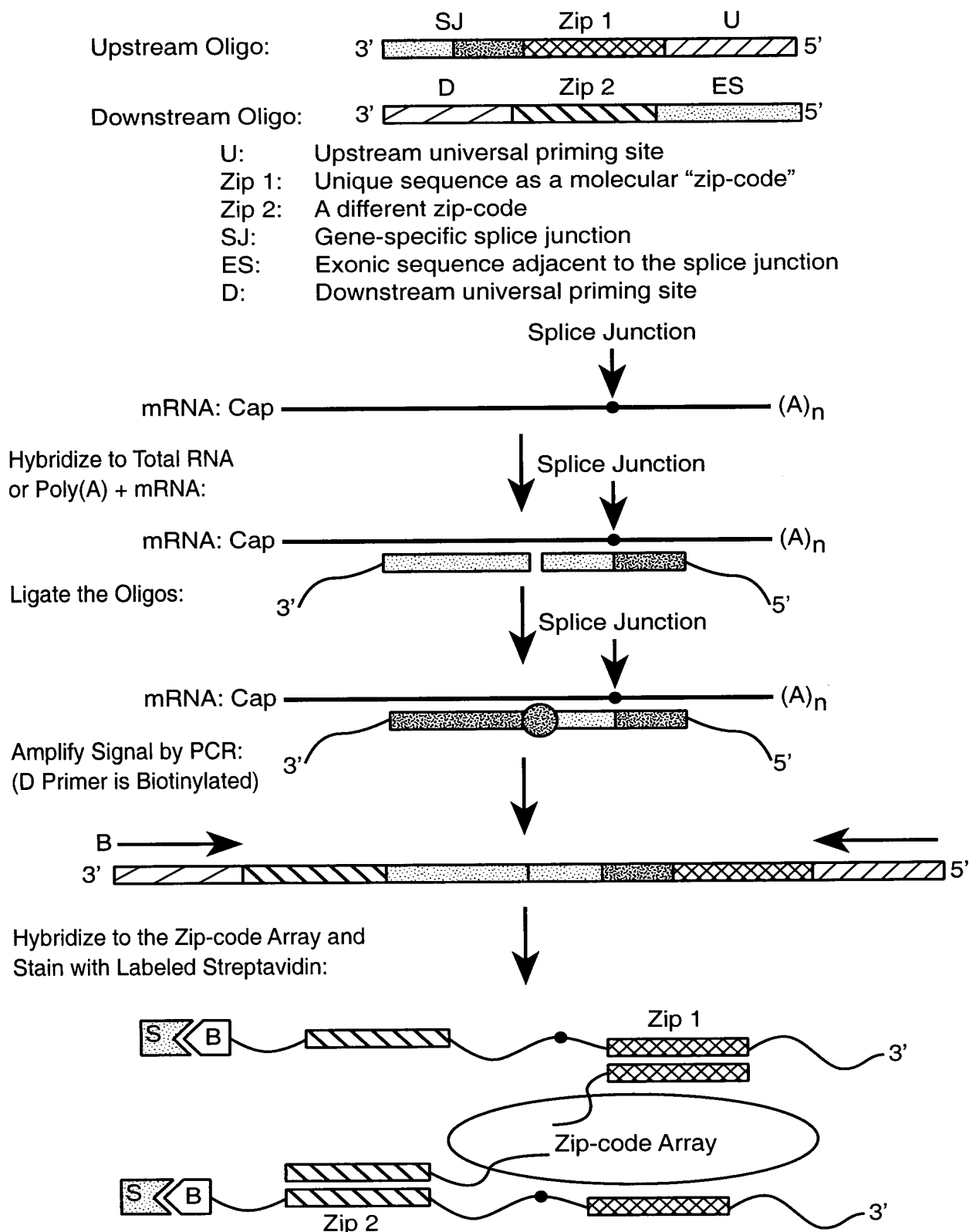


U: Upstream universal priming site  
 Zip 1: Unique sequence as a molecular "zip-code"  
 Zip 2: A different zip-code  
 EX1: Gene-specific exon sequence  
 EX2: Gene-specific exon sequence  
 D: Downstream universal priming site



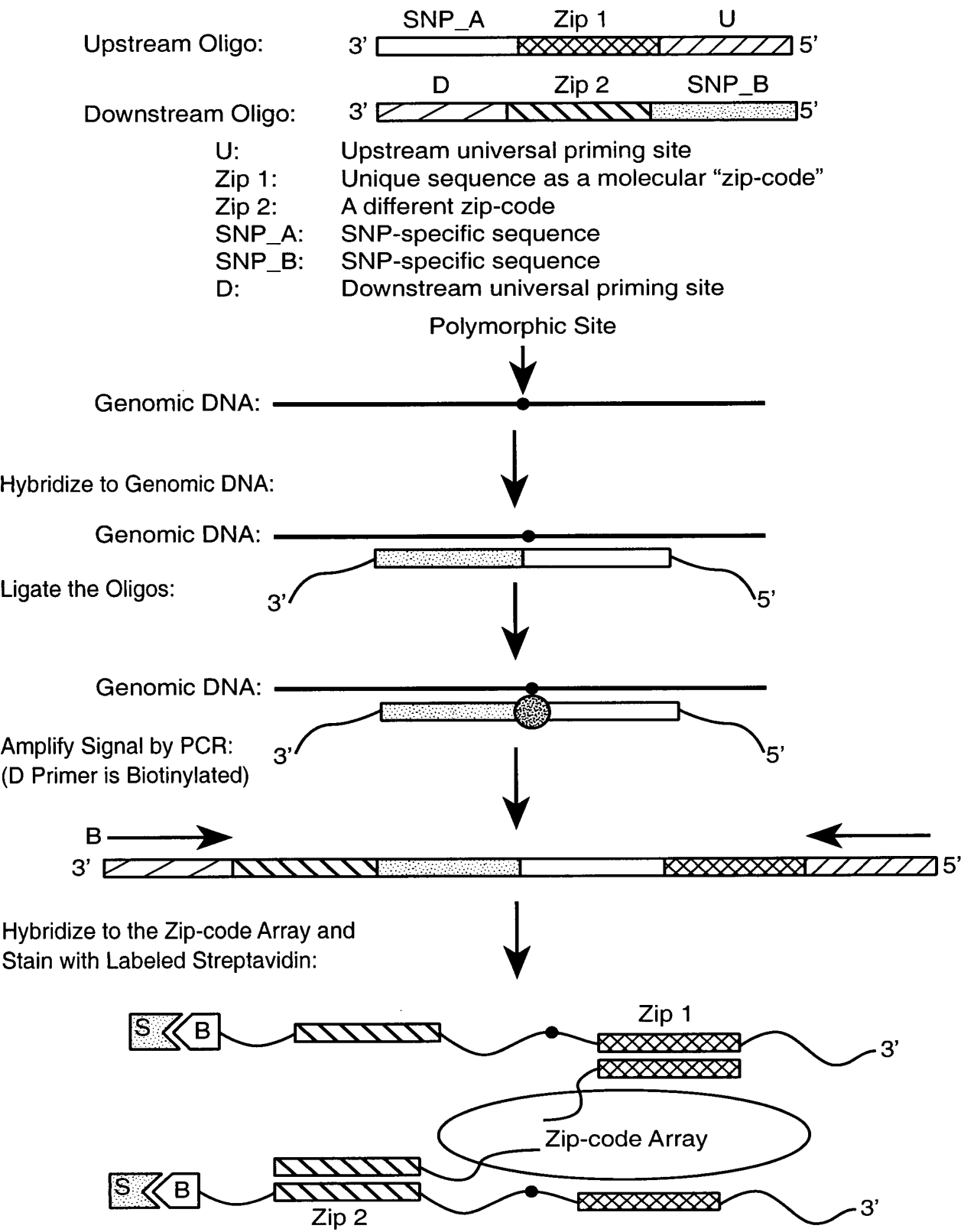
**FIG. 3**

## Genome-wide RNA Alternative Splicing Monitoring Using Oligo-Ligation Strategy



**FIG. 4**

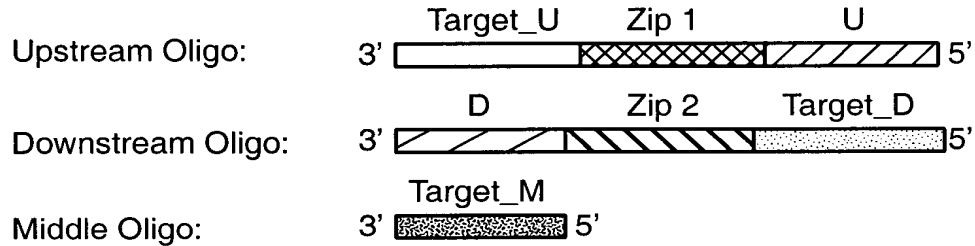
### Direct Genotyping Using a Whole-genome Oligo-ligation Strategy



**FIG.\_5**

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### Whole-genome Oligo-ligation Strategy



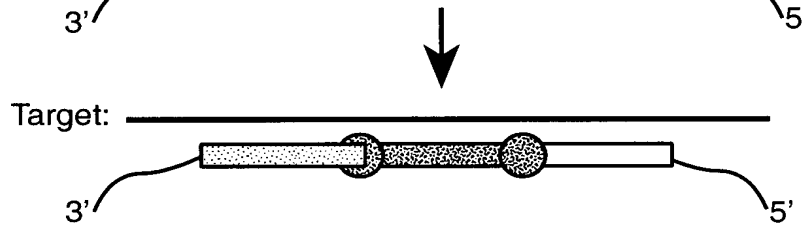
U: Upstream universal priming site  
 Zip 1: Unique sequence as a molecular "zip-code"  
 Zip 2: A different zip-code  
 Target\_U: Upstream target-specific sequence  
 Target\_D: Downstream target-specific sequence  
 Target\_M: Middle target-specific sequence  
 D: Downstream universal priming site

Target:

Hybridize to Target:



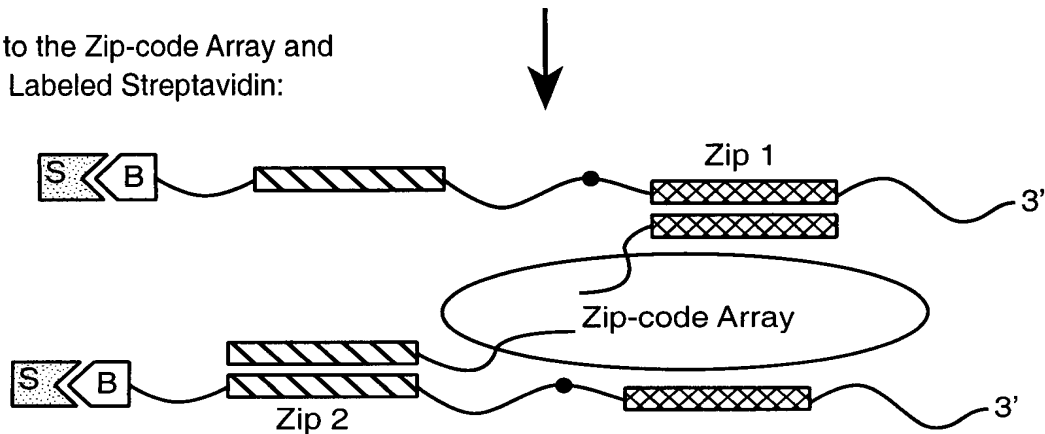
Ligate the Oligos:



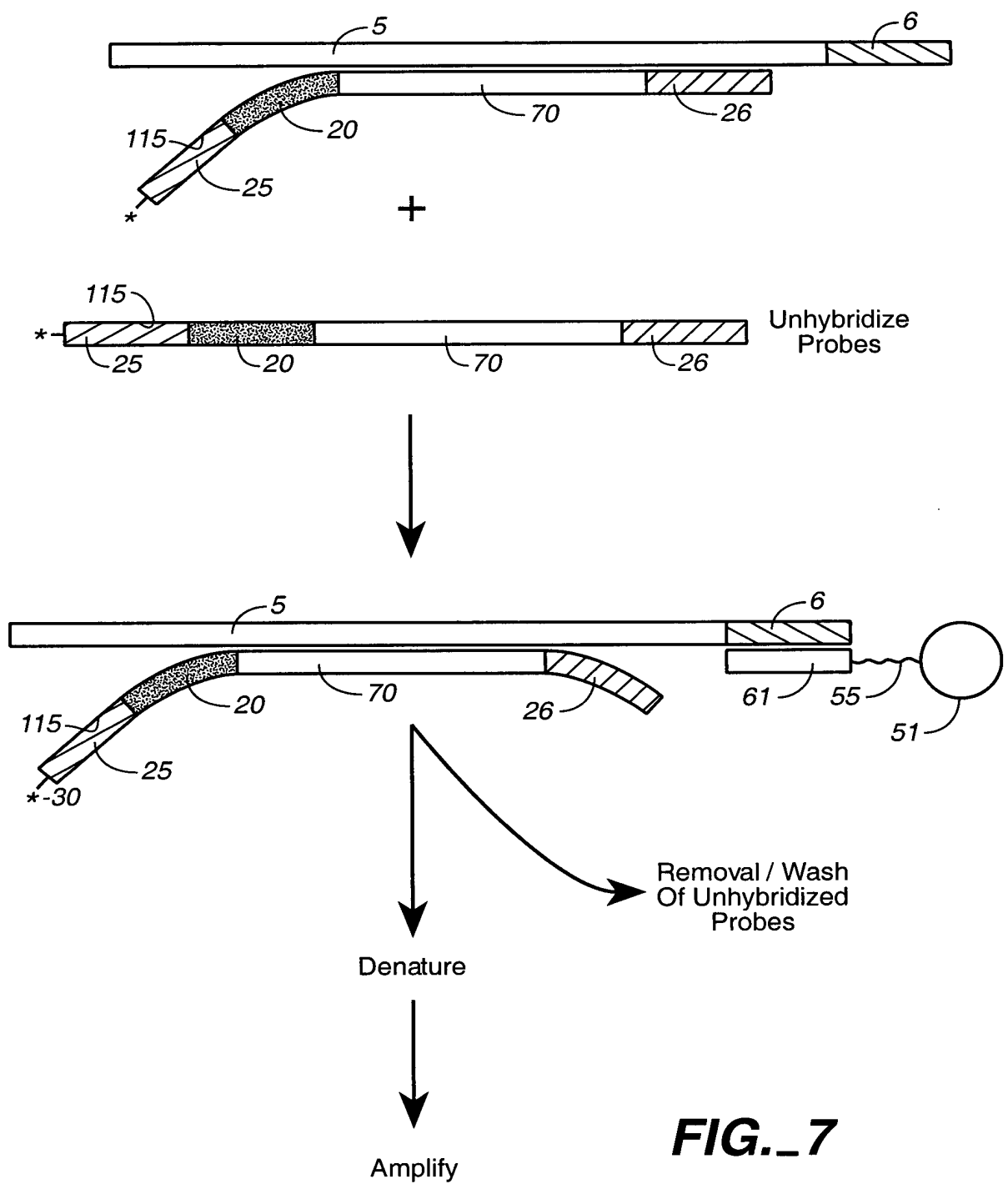
Amplify Signal by PCR:  
 (D Primer is Biotinylated)



Hybridize to the Zip-code Array and  
 Stain with Labeled Streptavidin:

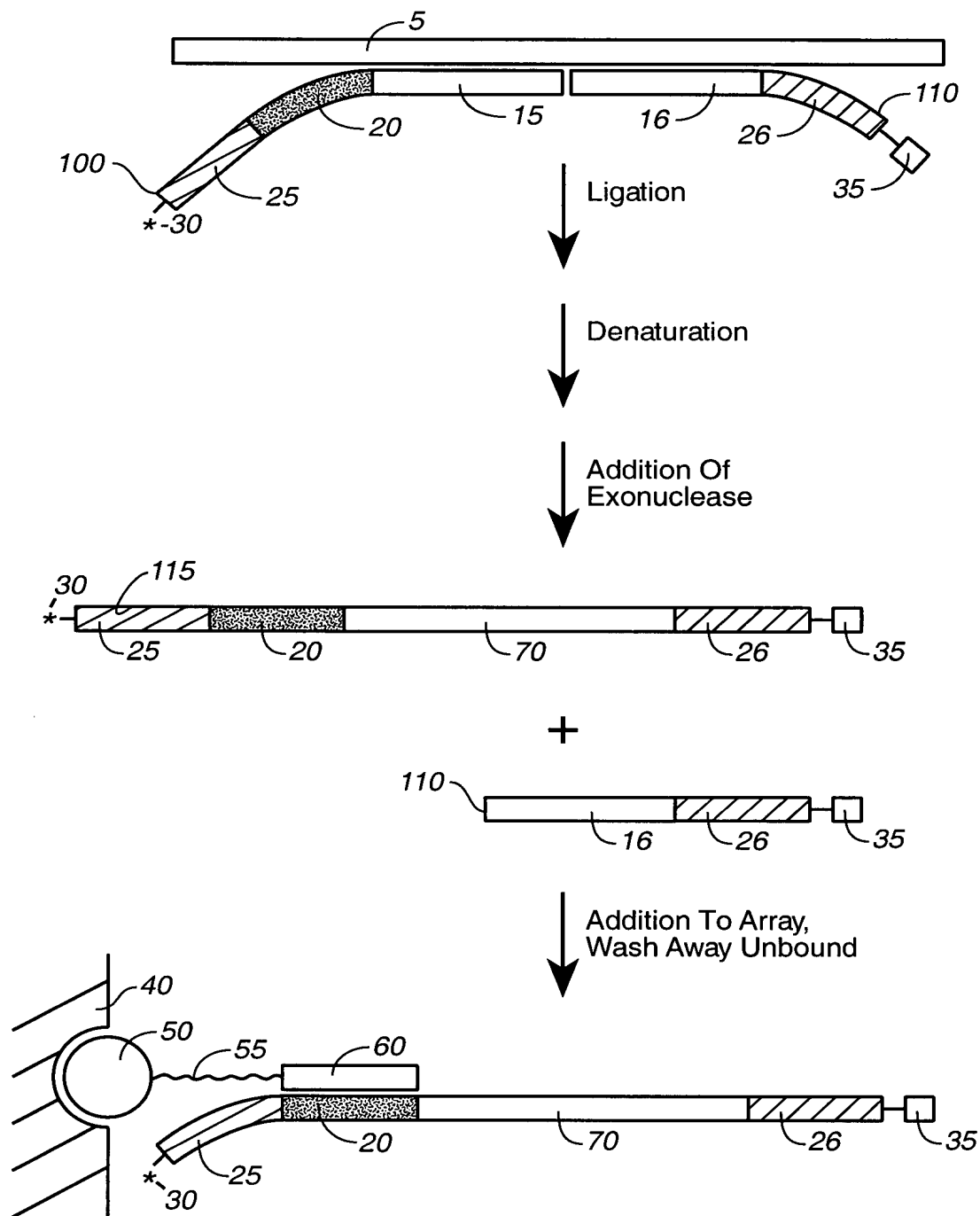


**FIG. 6**



**FIG. 7**

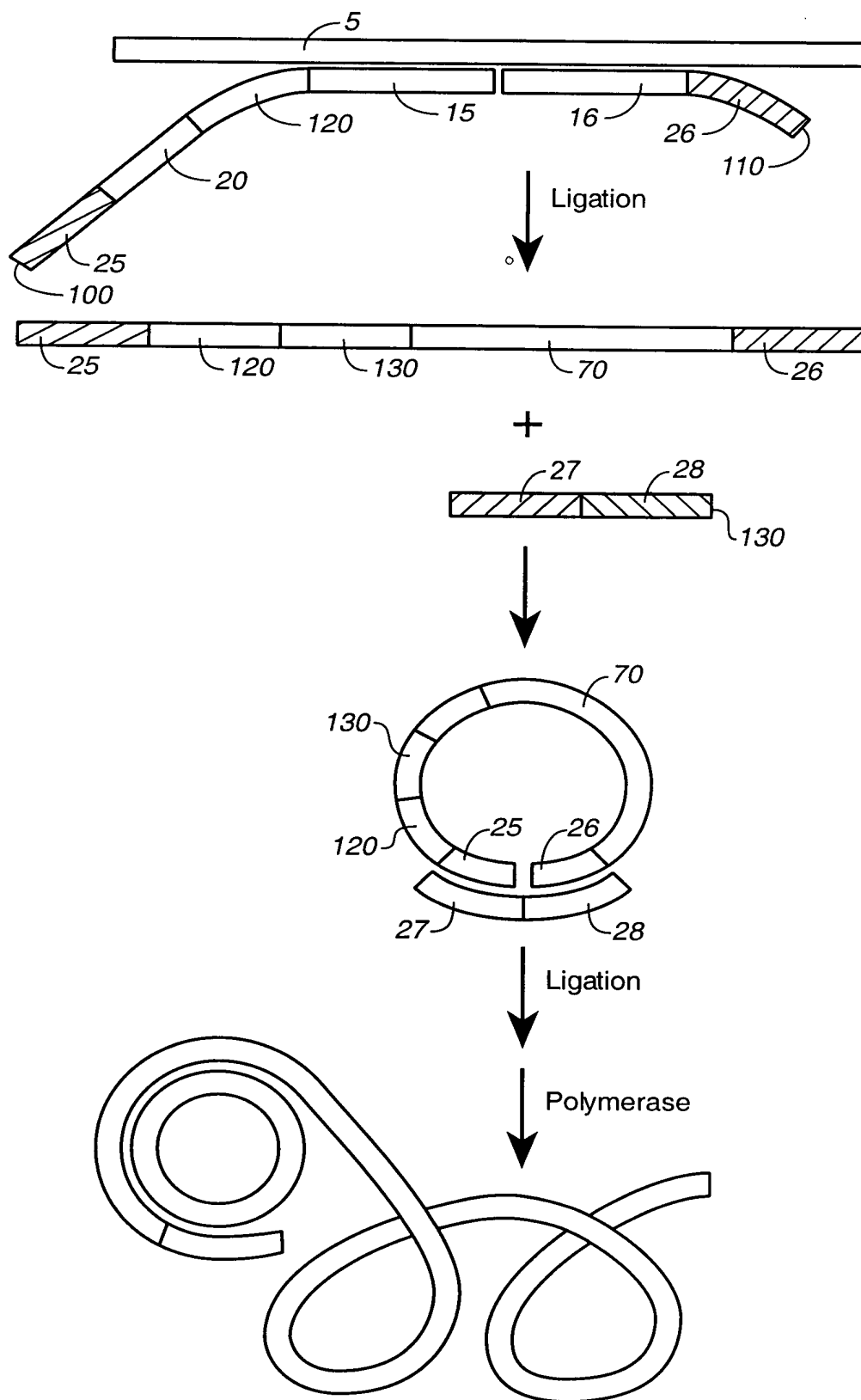
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**FIG.\_8**

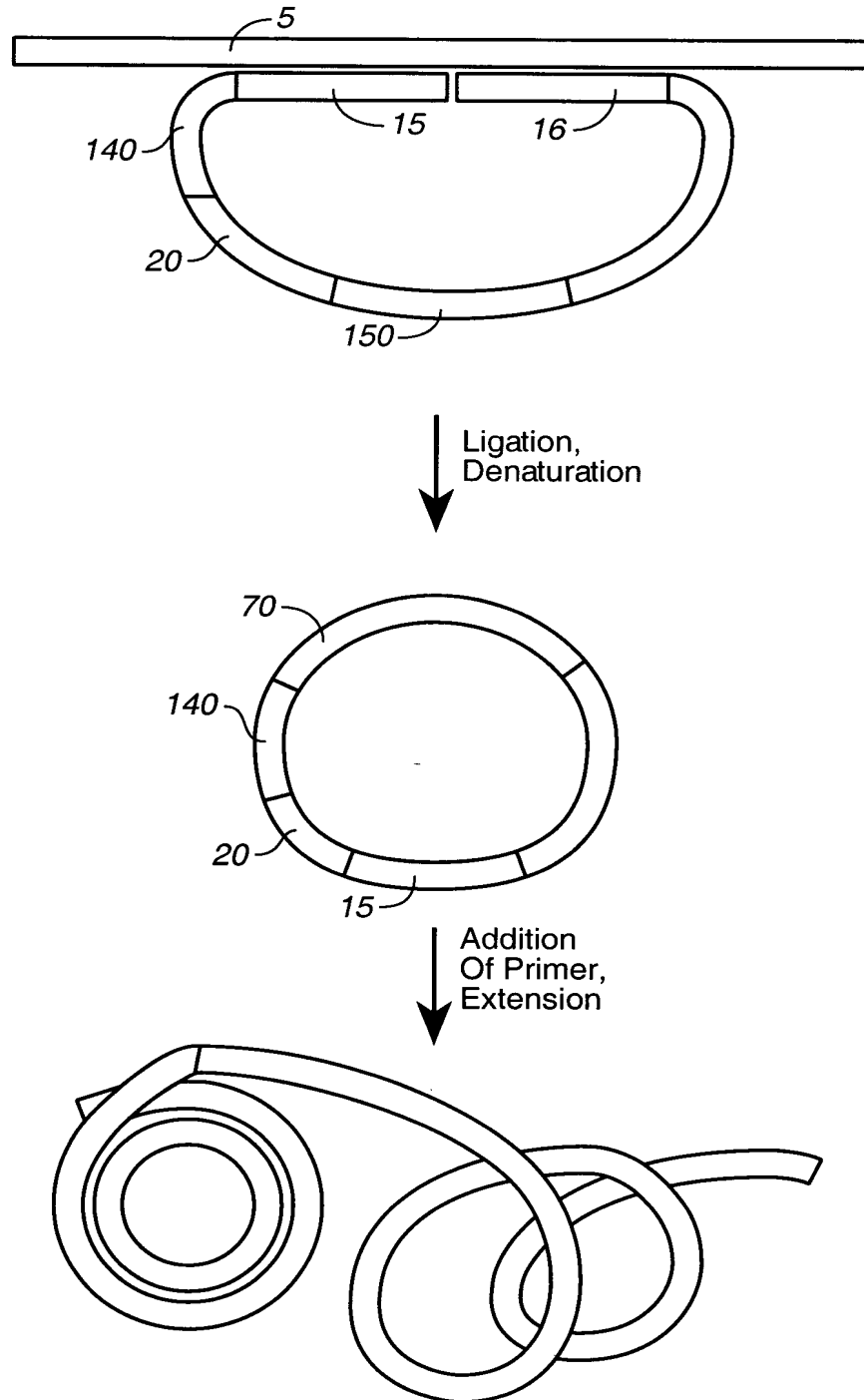


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**FIG. 9**

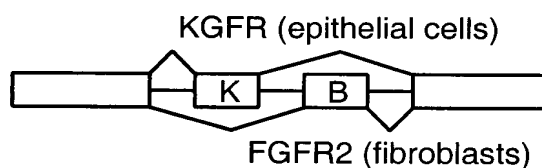
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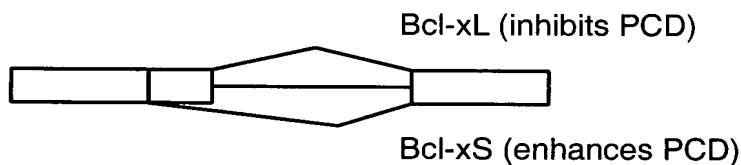
**FIG. 10**

### Alternative Splicing Targets Selected for Microarray Analysis

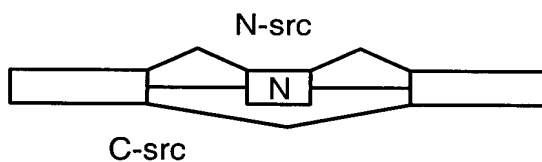
1. GAPDH (constitutive splicing control, signal normalization).
2. FGFR2 / KGF (mutually exclusive exons, internal cell type control):



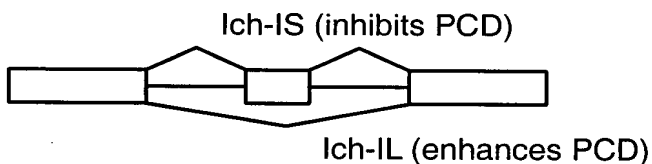
3. Bcl-x (alternative 5' ss):



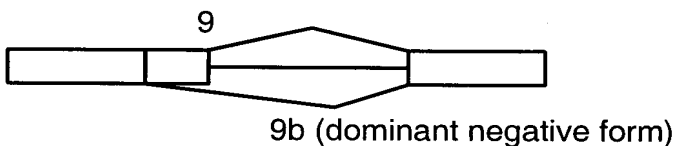
4. c-src (exon inclusion / exclusion):



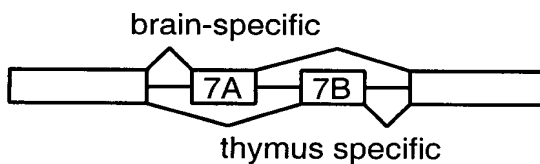
5. CASP2 (exon inclusion / exclusion):



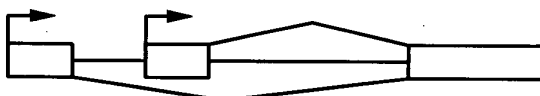
6. CASP9 (alternative 5' ss):



7. Fyn (src family tyrosine kinase, mutually exclusive exons);



8. NOS1 (alternative promoters / alternative 5' ss):



**FIG.\_11**